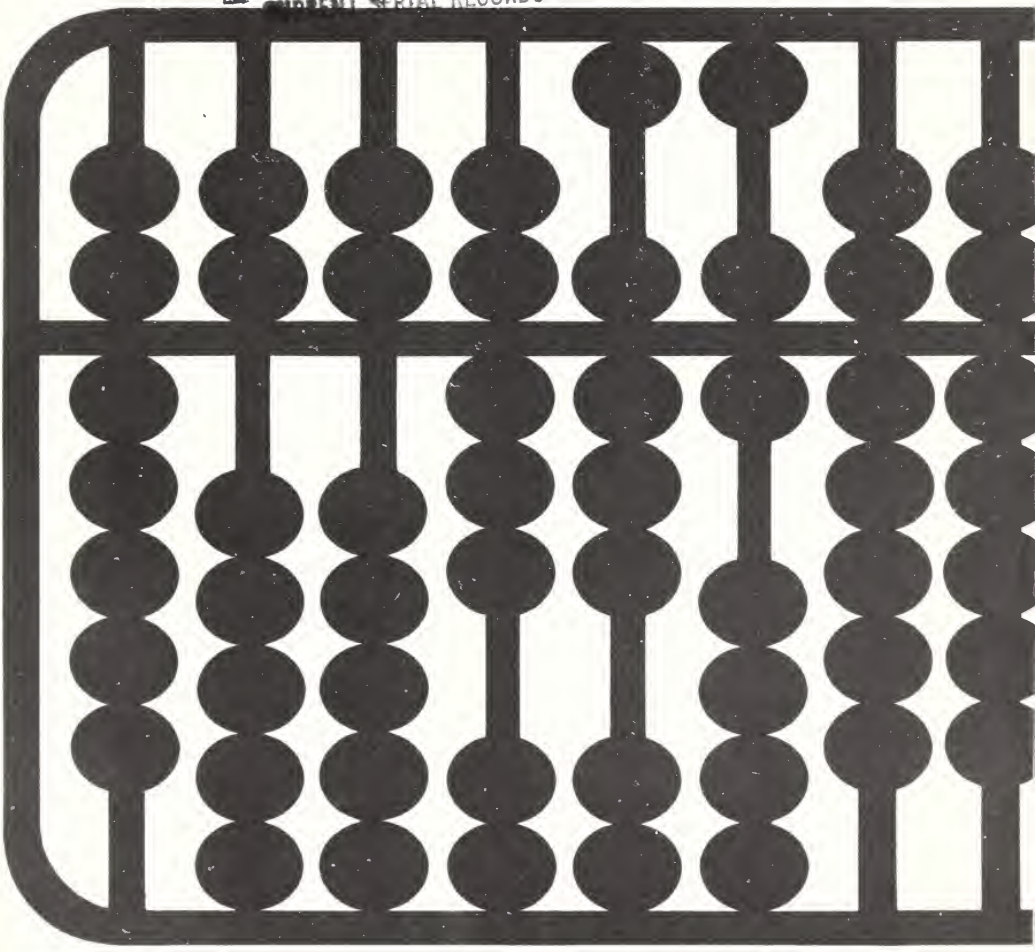
# agricultural SITUATION

## the crop reporters magazine

U.S. Department of Agriculture Statistical Reporting Service June 1972





## METRIC MEASURES: LEARNING THE BASICS

## METRIC MEASURES: LEARNING THE BASICS

Quickly—without looking in a book—how long is a meter, how much is a liter, how heavy is a gram?

If your only answers were three blank stares—take heart, most of us are with you. But the day is fast coming when we'll all need to have such information on the tips of our tongues.

Our yards and quarts and ounces—along with all else that's part of our present system of weights and measures—may soon be sacrificed to the cause of metrication, a system of measurement that nearly all the rest of the world is either using or is committed to adopting.

Presently we're one of only 12 countries—and we're the only important trading nation—still clinging to nonmetric measures. With us are Barbados, Burma, Gambia, Guyana, Jamaica, Muscat and Oman, Nairu, Sierra Leone, Southern Yemen, Tonga, and Trinidad.

### *The Long Road to Metric Measures*

It's ironic that we're one of the world's last nonmetric nations when we came close to being one of the first metric countries.

Late in the 1700's, when the United States was in the process of disentangling itself from England, some of our forefathers argued for the abandonment of our English weights and measures, too, on the grounds that they tied us to the mother country's trade.

These men proposed that we accept a newfangled measurement scheme the French were working on at that time. It was called the metric system and it was set up on the base 10—meaning that the units of the system, their multiples and submultiples were all related to each other by simple factors of 10. To convert between units it wasn't necessary to perform any fancy multiplication or division but simply to shift the decimal point.

But prevailing opinion at that time held it would be risky to abandon English weights and measures which were the most firmly established and widely used in the world.

We did get around to legalizing the use of metric measures in 1866 but to this day we've still not made adoption mandatory.

### *The Big Switch—And Why*

It's no longer a question of whether Twentieth Century America is going to go metric—it's simply a question of when.

In July of 1971, the Secretary of Commerce released a report from his agency on the pros and cons of metrication. The report was 3 years in making and it reflected the responses of numerous individuals and organizations in education, business, government, labor, and consumer groups throughout the country.

In releasing the report, the Secretary said, "For many years this Nation has been slowly going metric and it will continue to do so regardless of national plans and policies. At the same time, the worldwide use of the metric system is increasing and today ours is the only major nation which has not decided to take such a step."

"As the report states, a metric America would seem to be desirable in terms of our stake in world trade, the development of international standards, relations with our neighbors and other countries, and national security."

The Secretary of Commerce then went on to recommend to Congress a systematic, nationally coordinated U.S. changeover to the metric system of measurement over a 10-year period.

*The Pluses for Agriculture*

What will metrication mean to farmers when it comes?

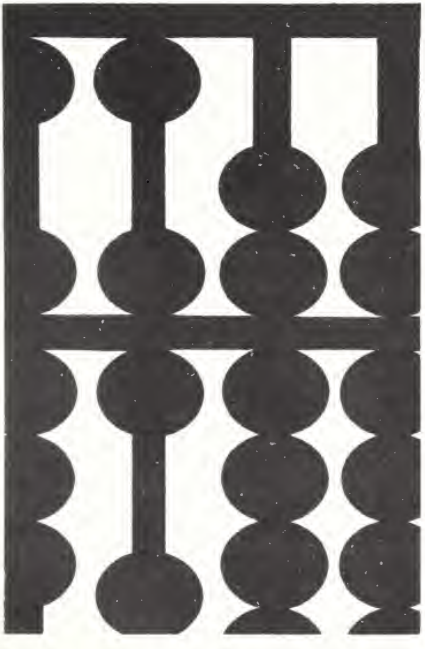
SRS's Earl Houseman was USDA's liaison man involved in preparation of the Commerce report. His own agency, along with 22 others in the Department of Agriculture, was queried on the impact of metrication on its sphere of agriculture.

The consensus among the agencies was that, in the longrun, agriculture probably has as much or more to gain from a nationwide conversion to the metric system than many other sectors of the economy.

Cited was the obvious benefit it would give agriculture in world trade. Many USDA agencies also noted the opportunity it would offer for improvement in marketing efficiency.

Right now, with our English system, numerous conversions from one unit of measure to another are a matter of everyday practice.

Agricultural products leaving the farm are sold by pound, gallon, bushel, or containers of innumerable shapes and sizes. Even a given measurement unit has many meanings within a commodity as well as among commodities.



Consider, for example, the bushel—perhaps the best known agricultural measure. It is commonly agreed to be 2150.42 cubic inches in volume—but its weight ranges from 60 pounds for wheat to 56 for corn, 32 for oats, and anywhere from 32 to 60 pounds for barley, depending on State laws.

Of course, we could work to simplify our English system—but the disruption among those involved would be almost as much as if we shifted to metric measures and we'd still be the odd man out in international trade.

*The Costs of a Changeover*

Metrication is going to mean retraining skilled men, retooling equipment, restocking inventories—and manufacturers are bound to pass some of these extra expenses on to their customers.

But again, past experience hints that cost hikes aren't always as big as expected. About 15 years ago the major U.S. drug manufacturers changed their internal operations and most of their products to metric. They found it surprisingly painless.

Costs were actually low—less than anticipated. One large company said costs in terms of employee time and equipment modification came to $250,000, which was only half to two-thirds of its preconversion estimate.

The same company believed it easily recovered the costs through such advantages as easier training of personnel; economies in manufacturing; reduction in errors; simplified specifications, catalogs, and records; and improved intracompany communications. The company also reported no apparent disadvantages.

*Can We Do It?*

Can the United States really go metric—mentally as well as physically?

Of course we can—it's just a matter of becoming as familiar with what 6° Celsius means as we are with 6° Fahrenheit.

But harder will be bringing ourselves

to abandon such time-honored phrases as "An ounce of prevention is worth a pound of cure . . . Texans wear 10 gallon hats . . . A miss is as good as a mile . . . ? Converted into metric measures, these are such a mouthful we wouldn't touch 'em with a 3.049-meter pole.


## THINK METRIC

Thinking metric isn't as hard as one might suppose. While there are six basic units in the International Metric System, we'd need to learn only three for use in our day-to-day living. Ready for a crash course?

—The meter is the unit of length.

—The kilogram is the unit of mass.

—The kelvin (in common use translated into the degree Celsius) is the unit of temperature.

The remaining three measurement units are: the second which is precisely the same unit of time as our own; the ampere or unit of electric current; and the candela or unit of luminous intensity. The latter two most of us would seldom need to bother our heads about.

All other weights and measures in the International Metric System derive from these basics. Area, for example, is measured in square meters; speed in meters per second; density in kilograms per cubic meter.

The really easy part of the metric system comes when you want to convert the basics to larger or smaller measures.

Every metric unit is related to another by multiples or submultiples of 10. For instance, there are 10 millimeters in one centimeter, 100 centimeters in one meter, and 1,000 meters in one kilometer.

If you want to calculate the number of meters in 3.794 kilometers, all you have to do is to multiply that figure by 1,000 (or move the decimal point three places to the right). The answer is 3,794. In our English system to find the number of inches in 3,794 miles, it is necessary to multiply first by 5,280 and then by 12.

Moreover, multiples and submultiples of the International Metric System follow a consistent naming scheme, which consists of attaching a prefix to the unit, whatever it may be. For example, kilo stands for 1,000. Thus, one kilogram equals 1,000 grams; one kilometer equals 1,000 meters; etc.

The only other memorization process necessary if the United States goes metric will be learning the names and meanings of these metric prefixes:

| *Prefix* | *Meaning* |
|---|---|
| tera | one trillion times |
| giga | one billion times |
| mega | one million times |
| kilo | one thousand times |
| hecto | one hundred times |
| deca | ten times |
| deci | one tenth of |
| centi | one hundredth of |
| milli | one thousandth of |
| micro | one millionth of |
| nano | one billionth of |
| pico | one trillionth of |

The obvious question about the International Metric System is just how do its weights and measures relate to our own. To give just a general feeling: the meter is about 3 inches longer than our yard; the kilogram is roughly twice as heavy as our pound; and the degree Celsius is about half our Fahrenheit temperature after subtracting 32.

Now all that's not hard, is it?

## SPOTLIGHT ON MONTANA

"Cattle outnumber people here by four to one," says Daniel Herbert, statistician in charge of the Montana Crop and Livestock Reporting Service. "But don't let the Charlie Russell look fool you. Our Old West flavor is salted with new management and production methods such as scheduled breeding and use of top blood bulls."

Cash receipts from cattle and calves dominate the State's over half-billion-dollars worth of annual farm sales. In fact, cattle earnings keep growing constantly. During the mid-1960's they averaged close to 44 percent of all marketing receipts; now they account for 55 percent.

Montana's 3.2 million cattle have land, lots of land, to graze—the Big Sky State contains over 145,000 square miles.

Ranchland covers around 45 percent of the State's total area and the State ranks No. 8 nationally in beef cows. Montana ships about 1½ million feeder cattle outside its borders each year. Just over a third end up on feedlots in two States: Iowa and Nebraska.

However, Montanans have been pushing their own feeding industry recently. In 1971 the State's cattle feeders fed out 235,000 cattle, compared with 146,000 in the mid-1960's.

"Sheep also outnumber people in this State," Herbert comments. "We began 1972 with about 1 million sheep, sixth in the Nation, whereas we have roughly 690,000 people." Sheep and wool generally earn about 3 percent of Big Sky cash farm income. That came to $16 million in 1970.

Dairy products also account for about 3 percent of earnings and other livestock and poultry earn 5 percent. Montana's hog industry is the fastest growing livestock enterprise in the State. Today, the State's swine number over a quarter million, the highest total in a quarter century.

"Add up the receipts from the livestock complex and you'll find they account for around two-thirds of Montana farm and ranch income," adds Herbert.

Now on the crop scene, wheat was the big earner, bringing in $1 out of every $5 earned by the State's agriculture. The 4.3 million acres combined in 1971 made up almost half the State's harvested acreage.

Large sections of north central Montana are suited to either winter or spring wheat. The State ranks fourth in total wheat production—just behind Kansas, North Dakota, and Washington. In spring wheat the State is edged out only by North Dakota.

Last year Montana farmers harvested 112 million bushels of wheat worth close to $204 million. In recent years over half the wheat moved west to Pacific ports for export. Montana wheat has done well in foreign trade of late because it enjoys a reputation for top quality and high protein value.

Because of relatively scanty rainfall, over 90 percent of Montana's wheat grows on land rotated with summer fallow. Strips of wheat are usually alternated with strips of fallow—each strip measures from 250 to 350 feet wide.

"Flying over sections of Montana, you see nothing but a great striped State," says Herbert. "As a matter of fact, we're the No. 1 State for strip-cropping, with 4.5 million acres. The practice not only saves moisture, it prevents soil erosion by our fierce winds."

"Many of Montana's crops are tied in some way to its diverse livestock industry," continues Herbert.

Barley is to the Montana feeders what corn is to the Midwest livestock farmer. Barley is the second most valuable crop and Montana ranked as the Nation's No. 2 barley State last year, after neighboring North Dakota.

During 1971 Montana planters harvested 1,680,000 acres of barley for almost 59 million tons of grain, over an eighth of the Nation's barley total. About 30 million bushels are shipped out-of-State every year; most of the rest is fed to livestock.

In the eastern third of the State, Montana farmers grew over 47,000 acres of sugarbeets in 1971. The yield was 900,000 tons of beets, worth $14 million. The sugarbeet tops were valuable, too, as an excellent feed for sheep and cattle.

Ranchers throughout the State grow hay—necessary to carry herds through often harsh winters. Montana hay production hit almost 4 million tons during 1971, earning the Nation's No. 13 hay spot. In fact, one out of every four of the State's 8.7 million crop acres harvested was hay.

Irrigation plays an important role for crops and pasture. All sugarbeets, half the hay, and some grain and pasture receive supplemental water.

"Irrigation is a natural outgrowth of our early mining days," concludes Herbert. "The miners turned to farming and converted their water handling knowledge to gravity flow irrigation systems. As a result of this early history, Montana has over 1.8 million acres of irrigated land."

Take a plane over Montana and you'll see a great striped State. Montana has 4.5 million acres in strip cropping, more than any other State in the Nation.

Cowboys drive some of the Big Sky State's 3.2 million cattle to market. But the Old West look is only part of the story. Montana ranches are run according to the newest methods in management and production.

## LESS LOTS

SRS counted fewer feedlots in the 23 major cattle feeding States last year than in 1971—but the ones still around had gotten a good deal bigger.

The total in the 23 States came to just under 169,000, down nearly 8 percent from 1970. The drop, however, masked a 2-percent gain in lots with capacities of 1,000 head or more.

The 23 States together marketed slightly over 25.3 million head of fed cattle last year, 2 percent more than in 1970. Feedlots handling 1,000-plus head could claim about 58 percent of the 1971 sales, up from 55 percent the year before. The share of the small lots dipped to 42 percent versus 45 percent in 1970.

Iowa was the Nation's top feeding State last year with the most feedlots—39,000—and the largest marketings—4.0 million head. However, Nebraska had the most operations in the 1,000-head-and-up size range.

## MILLFEEDS: WHAT THEY SHOULD MEAN TO YOU

If you're feeding out any beef or dairy cattle on high protein rations, chances are you're missing a bet by not including more millfeeds. Same thing goes if you're using low energy poultry rations requiring less than 1,300 kilocalories of metabolizable energy per pound.

To be sure, if you check your feed formulation, there probably are some millfeeds—bran, middlings, or millrun—included in the rations.

But a recent study by USDA's Economic Research and Agricultural Research Services suggests that, on the basis of millfeeds' high nutritive value and low costs compared with other feedstuffs, they deserve far wider acceptance by livestock and poultry growers.

In their study the USDA researchers followed the same steps as commercial feed formulators and feed consultants are taking nowadays.

Using a computer, they developed a series of least-cost rations for various livestock and poultry groups. Then the researchers figured out the highest price at which millfeeds would be accepted into the least-cost diets and compared these computed prices with actual millfeed market prices during four different time periods in four important feed markets.

The result: Computed millfeed values in high protein dairy and cattle supplements often far outdistanced their actual selling price.

For example, in Los Angeles during August–October 1968, millrun could have made up a minimum of 2.5 percent of a least-cost beef finisher ration if it were priced at $49.40 a ton. In actuality, millrun was selling for about $8.60 less in Los Angeles during this time period—making it an excellent buy vis a vis competing feedstuffs.

The same relationship between millfeed values and actual market prices held true for low energy poultry rations.

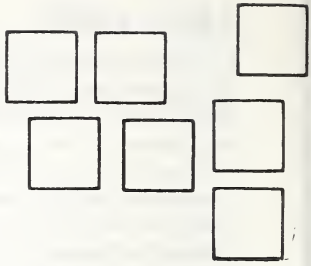
In the Atlanta market, middlings would have been acceptable in a least-cost broiler-pullet developer ration if priced at $78.20 a ton during November 1967–January 1968. That was $26.20 higher than the actual average selling price in Atlanta during that time.

The ERS–ARS people found millfeeds to be of little value in high energy poultry rations—especially broiler starter and broiler finisher feeds—because nutrient requirements could be supplied by other feedstuffs much more cheaply.

This might change though, if research now underway is successful in improving the biological availability of naturally occurring nutrients in millfeeds.

Were the metabolizable energy of millfeeds to be boosted by 25 percent and were the protein, amino acids, and phosphorus increased to 100 percent availability, these byproducts of the flour milling industry might gain in high energy poultry feeds, too.

# The June Acreage, Livestock & Labor Survey



Somewhere on your south 40 may be just the piece of land SRS is looking for in its June Acreage, Livestock, and Labor Survey—USDA's biggest data collection effort of the year.

The survey, conducted annually during late May and early June, has as its main aim a count of the planted acres of major crops. All crop production estimates from July through harvest rest on this acreage base. Important information is also gathered for the June hog report and the July calf crop and cow inventory.

In statistical circles the survey is what is known as a probability sample—the 16,500 land segments chosen for enumeration are selected scientifically to represent a cross section of U.S. farming.

Information from the sample segments can be expanded by SRS into reliable estimates for the individual States, regions, and the Nation.

The accuracy of the survey reflects, in large part, the care SRS takes in conducting it.

First step is the selection of the land segments. Using aerial photographs covering all portions of the United States except Alaska and Hawaii, SRS statisticians select from 250 to 1,000 land segments in each State.

The number of segments per State depends largely on the scope of farming activity. A typical Corn Belt State will have its estimates drawn from a sampling of about 350 land segments. Southern States with a greater variety of farm product output will have about 425 segments sampled. In Texas and California, segments will number about 1,000 each.

Any person, farmer or not, who lives on or operates land in one of these all-important segments is contacted by one of the 1,350 enumerators sent out from SRS field offices.

In all, this means SRS will have to knock on nearly 125,000 doors to locate the 70,000 operators who will be questioned at length on planted acreages, livestock, poultry, farm labor, and other needed information.

Mail questionnaires and phone interviews with some large-scale operators serve to round out the agricultural picture and assure that no important information is omitted. Final estimates are based on a review of all this information.

SRS plugs in a host of quality controls to assure precision. All its enumerators are chosen carefully, trained well and supervised closely. Indeed, supervisors visit a few segments previously checked and make their own on-the-spot enumerations of planted acreages. Reported acreages are also compared with measurements from aerial photos.

Of course the key man in the June survey, the person ultimately responsible for its accuracy, is the U.S. farmer.

Every single interview is critical in a probability sample since each operation is a stand-in for a far larger portion of the Nation's agriculture. There's simply no good way to replace a farmer who doesn't respond. The refusal level is very low, however.

Expanding the information from the

Collecting the data for the June Acreage, Livestock, and Labor Survey requires about 1,350 fact collectors. These people work part-time after being hired and trained by SRS field offices. Each enumerator uses highway maps and aerial photos to locate the exact area segments to examine. They will ask some questions at every occupied house in the segments and record the acreages and the land use for every field.

farmers works like this. Suppose, for instance, the land in the segments equals about 1/100th of all land in a State. If a State's enumerators count 15,000 acres of soybeans in the segments, statisticians will multiply that figure by 100 to come up with an estimate of 1,500,000 soybean acres in the State.

The same procedure is used to expand livestock data.

In fact, on a national basis, the expanded estimate from the sample segments is within 1 to 2 percent of what would turn up if every U.S. acre were enumerated.

Statisticians from around the world say these are good marks for a survey. Many countries would like to have a similar annual survey.

The probability sampling technique is more expensive than other methods but it yields the best possible estimates for farmers, policy makers, and other data users.

## STARTING WITH JUNE

Many of SRS's special surveys start with the June Acreage, Livestock, and Labor Survey—which reveals who's growing what each year.

Farmers operating land in the segments enumerated in June often are contacted again during the year for the special surveys on farm labor or such commodities as cattle, hogs, chickens, and mink—to name just a few.

The June survey is also used to select certain fields of corn, cotton, wheat, and soybeans for observation during the growing season. Small plots in these fields provide the information for SRS's objective yield forecasts—as important as planted acreage in accurately estimating the size of U.S. crops.

## MICHIGAN TART CHERRY TALLY

Michigan is the Nation's No. 1 producer of tart cherries and this June marks a milestone of considerable importance in the State's cherry industry.

Some 20 days after peak bloom, about the middle of the month, SRS will conduct the first objective survey of the State's tart cherry yields.

The aim of the survey, which is being undertaken with funds provided entirely by the Michigan State legislature, is to improve the accuracy and reliability of SRS's production forecast scheduled for release on June 23, 1972.

Up to now, the forecast of Michigan's tart cherry output has been based solely on condition reports mailed in by growers for their own orchards or localities. The mail survey will be continued—but long experience has shown that when the tart cherry crop is either exceptionally heavy, light, or spotted, it's difficult, if not impossible, to appraise these unusual prospects accurately through a mail survey alone.

Consequently, when Michigan's commercial cherry growers voted for a marketing order beginning with the 1971 crop, truing up the mid-June cherry forecast became an item of top priority.

The mid-June forecast serves as the base for many major marketing decisions made by the State's Cherry Marketing Order Administrative Board. The result was the decision by the Michigan legislature to appropriate the funds for SRS objective yield count.

The procedure to be followed in the survey this June will be based, in part, on several earlier pilot projects conducted in parts of Michigan between 1958 and 1963.

Information will be collected on the average number of fruit per tree and weight per cherry—which will then be used to compute an average yield per tree.

The number of trees and cherry production per tree can be expanded by the statisticians into a projection of total production in the State.

In mid-April enumerators employed by the Michigan SRS office fanned out through the State, contacting the operators of the 300 orchard blocks chosen for the tart cherry survey. *Above:* Enumerators select a terminal limb for counting in June. *Right:* This tree is being marked and tagged so it will be easy to locate when the enumerator revisits the orchard.

Statisticians began working out the details of the June survey early in January. Using a list of all growers who marketed tart cherries in 1971, they selected a random sample of 300 orchard blocks throughout the State. Fruit counts will be made in three trees per block and on two terminal branches in each tree. Subsample blocks were also picked for a special bloom count and for final preharvest and postharvest surveys.

In mid-April, enumerators employed by the Michigan SRS office fanned out through the State, contacting the operators of the 300 orchard blocks chosen for the objective yield survey.

At that time, the enumerators gathered basic information about the growers' total operations and marked and tagged the trees to be counted in June.

In the subsample orchard blocks picked for a bloom count, the enumerators tallied up all fruit by stage of bloom development on one of the terminal limbs on a preselected tree in each block. The purpose of this check was to establish the average bloom dates for the various tart cherry areas in Michigan.

During June the enumerators will again visit all 300 orchard blocks and make their on-tree fruit counts on the preselected limbs. When the on-tree counts in each block are finished, one of the sample limbs will be completely stripped and its fruit will then be sent to an area laboratory for recounting and weighing.

Later in the growing season SRS will return to some orchard blocks to estimate growth and droppage of tart cherries between mid-June and harvest and to measure harvesting losses.

While more expensive than the mail survey, the objective yield survey will give Michigan's growers a more accurate picture of the tart cherry crop—especially in years of unusual prospects.

The small red fruit are big business in the Wolverine State: in 1971 the 89,000 tons produced sold for a hefty $18 million. Michigan normally accounts for over two-thirds of the Nation's tart cherry output each year.

## HIGHER HIRED FARM WORK FORCE

The hired farm work force increased slightly during 1971, interrupting the downtrend in progress since 1967.

A survey of workers 14 and older who did some farmwork for cash wages in 1971 showed about 2.6 million people were part of this hired labor force, up from 2.5 million the year before.

All of the gain was in the nonmigrant group; the number of migrant workers declined 12 percent—falling from 196,000 in 1971 to 172,000.

Summing up the major characteristics of the hired farm work force: it was young (median age 22); male (76 percent); white (78 percent); and lived in nonfarm places most of the year (73 percent).

Considered as a whole, the group averaged $822 in cash wages from farmwork—$11.60 a day for 76 days.

More than a third of the workers also performed some nonfarm work during the year, averaging 111 days at $17.20 a day for a grand total of $1,908 in nonfarm earnings.

Farm wagework was the main occupation for slightly under a fifth (484,000) of the workers. And of these, only 285,000 were year-round farm employees who put in over 300 days of work. These people averaged $3,799 in farm earnings during 1971—or $12.00 a day for 317 days of labor.

Almost three-fifths of the workers (1.2 million) weren't in the labor force most of the year. This group consisted mainly of students (about 1 million) and housewives. Their farm earnings for the year averaged only $89—or $9.90 a day for 9 days of work.

Those in the hired farm working force performed about 195 million man-days of work on farms in 1971—about one-fourth of the total number of days of labor. Regular and year-round workers, though they represented only about 1 in 5 workers, did about two-thirds of the man-days of labor credited to the whole hired farm work force.

# outlook

Digested from outlook reports of the Economic Research Service.
Forecasts based on information available through May 1, 1972

**NO CHANGE** . . . USDA announced in late March that the manufactured milk support price will stay at $4.93 per hundredweight for the year beginning April 1, 1972. Because of a lackluster 1972 commercial market for milk and dairy products, coupled with no change in the milk support rate, prices for manufacturing grade milk will probably hold close to 1971 levels through summer, then rise seasonally in the fall.

●

**FARMERS' EXPENSES** have risen 60% since 1960 and will probably rise another 3½% to $44.5 billion in 1972. Higher prices accounted for 55% of the decade's farm cost gain, while larger quantities used accounted for 45%.

●

**FED CATTLE MARKETINGS** in the second half of 1972 will largely depend upon first half placements. With a larger feeder cattle supply, lower feed costs, and relatively high fed cattle prices, increased first half placements seem likely. First quarter placements in the 23 major feeding States were up 9%.

●

**MEAT IMPORTS** . . . The voluntary restraint level for 1972 meat imports is 1,240 million pounds (product weight), nearly a tenth above 1971 actual imports. Imports consist mainly of frozen boneless beef so cow prices will be affected more than fed cattle prices.

●

**HOG PRICES** will rise seasonally this spring to a summer high above $25. Prices will weaken in the fall as slaughter supplies increase seasonally but probably will run considerably above last fall's average of $20. Larger beef and broiler output in 1972 may tend to temper price gains for hogs but strong consumer demand for meat will be a strengthening factor.

**SPEAKING OF FEED** . . . Feed grain producers can look forward to a better season in 1972/73 if they do not exceed their March 1 plans of 118.3 million acres. With prospective production and usage in fairly close balance, prices would be more stable and firmer at harvesttime than the low levels in 1971.

●

**BUMPING THE BUMPER** . . . Farmers have signed up to set aside 37 million acres of their 1972 feed grain land, about double that of last year and very close to USDA's target.

●

**MAKING HAY** . . . Hay prices rose more than usual this winter and continued well above a year earlier in February and March. The U.S average farm price in March was $29 a ton, up 12%. Greatest increases were reported for the Rocky Mountain States—up 26% from a year earlier.

●

**PROTEIN** . . . Consumption of high-protein feeds this spring and summer is expected to gain on last year's rate and for the entire feeding year it will nearly equal the 20.1 million tons fed last year. The number of high-protein animal units to be fed is estimated at 142.8 million, up slightly from a year ago, but the feeding rate per animal is expected to decline slightly.

●

**UP IN SMOKE** . . . Total disappearance of tobacco for 1971/72 should exceed the 1971 crop of 1.7 billion pounds even though domestic use and exports will total less than last year. This would leave a year-end carryover of about 3.5 billion pounds, 4% below a year earlier.

●

**U.S. SMOKERS** puffed a record 555 billion cigarettes last year—3% more than the previous year. Adult consumption per capita rose 2% to 4,040 cigarettes (202 packs). Per capita use may hold at last year's level, so this year's total is expected to increase slightly. Sales of cigars and smoking tobacco may rebound from last year. Chewing tobacco sales are gaining.

●

**MORE COTTON** . . . Farmers plan on substantially larger 1972 cotton acreage. March 1 intentions said U.S. farmers intend to plant 13.5 million acres, including 98,700 acres of extra long-staple. For upland cotton, this is about 0.3 million more acres than indicated in January, mainly caused by expected higher cotton prices.

**COTTON PRICES** for better qualities continue to advance but at a slower rate than earlier in the season. Prices for some of the lower qualities declined during March. Still, spot market prices in early April for most qualities of upland cotton averaged nearly 10 cents a pound above last year. Price increases range from about a third for the longer staples to about two-fifths for some of the shorter staples.

●

**COTTON CONSUMPTION** . . . Despite our smaller and higher priced supplies and intensive manmade fiber competition, U.S. mill consumption of cotton during 1971/72 may about match last year's 8.1 million bales. Increasing total fiber demand, plus the growing popularity of such items as cotton denim and corduroy, are benefiting cotton use.

## STATISTICAL BAROMETER

| Item | 1970 | 1971 | Latest data available | |
|---|---|---|---|---|
| Prices received by farmers (1967=100) | 110 | 112 | 120 | April |
| Prices paid, interest, taxes, wage rates (1967=100) | 114 | 120 | 125 | April |
| Ratio (1967=100) [1] | 96 | 94 | 96 | April |
| Consumer price index: | | | | |
| All items (1967=100) | 116 | 121 | 124 | March |
| Food (1967=100) | 115 | 118 | 122 | March |
| Disposable personal income ($bil.) | 687.8 | 741.2 | 754.8 | [3] |
| Expenditures for food ($bil.) | 114.0 | 118.4 | 120.0 | [3] |
| Share of income spent for food (percent) | 16.6 | 16.0 | 15.9 | [3] |
| Farm food market basket: [2] | | | | |
| Retail cost ($) | 1,223 | 1,244 | 1,297 | Feb. |
| Farm value ($) | 476 | 477 | 516 | Feb. |
| Farmer's share of retail cost (percent) | 39 | 38 | 40 | Feb. |
| Agricultural exports ($bil.) | 7.2 | 7.7 | 0.7 | March |
| Agricultural imports ($bil.) | 5.7 | 5.8 | 0.5 | March |
| Realized gross farm income ($bil.) | 56.6 | 58.6 | 60.9 | [3] |
| Production expenses ($bil.) | 40.9 | 42.9 | 43.6 | [3] |
| Realized net farm income ($bil.) | 15.7 | 15.7 | 17.3 | [3] |

[1] Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates.
[2] Average annual quantities per family and single person household bought by wage and clerical workers 1960–61 based on Bureau of Labor Statistics figures.
[3] Annual rate, seasonally adjusted fourth quarter 1971.

## SAVE THE WATER

The battle between farmers and dry weather is fought somewhere in the United States every year. The fight is extremely rugged for "old man drought" and the horticultural farmer.

However, USDA hopes to pump up some new ideas by studying innovative uses of plastics to save water of irrigated horticultural crops. Here are the newer developments that might someday soon be in use commercially.

—Double wall tubing for drip irrigation of row crops. This system distributes a small amount of water uniformly over large areas of the surface soil. The slow rate of flow per outlet gives good moisture penetration without runoff.

—Trickle irrigation systems. Plastic pipes carry the irrigation water to the field and smaller plastic tubes deliver the water to the row of plants or individual trees where it trickles into the root zone.

Field trials show trickle irrigation used less water and reduced production costs with improved crop yields and quality of products.

—Plastic catchments of rainfall. This system uses a sheet of plastic on the ground to "harvest" rainfall and deliver it to a covered storage basin.

For example, near Tucson, Ariz., where on the average 300,000 gallons per acre of rainfall occurs each year, much of this water is lost by runoff or evaporation.

The harvest and use of this water will be one of the most valuable products of an acre of land located in an arid environment.

## SNAP-ON BATHROOMS

A new "snap-on" bathroom may provide instant modernization for some rural homes.

The preconstructed unit contains a 30-gallon hot water heater, flush toilet, shower and tub, medicine cabinet, and electrical outlets. The unit can be attached to a home and be operational within a matter of days. This assumes the house has running water, electricity, and sewer lines.

Snap-on bathrooms are receiving serious study in several States which have many dwellings classified substandard because they lack indoor bathrooms.

In South Carolina, where about 150,000 homes lack some or all plumbing, USDA's Farmers Home Administration is working with the State Housing Authority to provide these units to residents who qualify for FHA loans.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**Editor: Geraldine Schumacher**

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